



Confederated Tribes of Warm Springs, Oregon
Office of the Chief Operations Officer
PO Box 455
Warm Springs, OR 97761
Phone: 541-553-3212
Fax: 541-553-2236

Warm Springs Infrastructure Funding Summit June 12, 2019

I. Water

- A. There are 3 independent drinking water systems that are owned and operated by the Confederated Tribes of Warm Springs (CTWS). These include: Warm Springs, Simnasho/Schoolie Flats, and Sidwalter community water systems. These facilities serve estimated populations of 3,800, 120 to 185, and 350 respectively.

1. Warm Springs Community Water System

- Built in 1981, this water treatment plant (WTP) utilizes a surface water treatment process and is rated at 4.3 million gallons per minute capacity. Water is drawn from the Deschutes River and serves the Warm Springs community (Agency area), Industrial Park, Casino, old mill site, Museum at Warm Springs, Kah-nee-ta Resort, and residential developments.
- Total of 1,298 total existing connections. Local businesses area metered but a majority of the connections are not.
- Total of 7 water reservoirs and 5 primary pressure reducing vaults (PRV) that are a part of the distribution network. Total water storage of approximately 6 million gallons.
- Average monthly water use in the Agency area is 63.4 million gallons. This is more than the average water use for the City of Bend.
- Current staffing includes 2 state certified licensed operators with over 50 years of experience combined. There are a total of 3 dedicated employees at the WTP with water distribution staff gaining experience at the WTP.
- The WTP has an engineered oxbow where the majority of river flows does not enter.
- Annual electrical cost for the facility averages approximately \$350,000.
- Annual chemical (chlorine, ACH) cost is \$55,000.

2. Simnasho/Schoolie Flats Community Water System

- Utilizes groundwater from two wells that produce 250 gallons per minute for the Simnasho and rural homes in the Schoolie Flat area.
- Water demand is supplied by two groundwater wells and one pump house five miles west of the abandoned Beaver Creek well site along Hwy. 26 and one pump house on Hwy 9.
- Total of 81 existing connections and all had meters installed in 2012 through ARRA funding.
- Total of three water reservoirs and one PRV that are part of the distribution network with 1 utilized for fire protection.
- Average monthly water consumption rate is 2.6 million gallons per month combined.
- Water system was replaced in 2014 at the cost of \$2.5m due to arsenic limit exceedance. The total project cost was approximately \$3.2m with funds from EPA, USDA, RCAC, IHS and the Tribe.



3. Sidwalter Community Water System

- Built in 1986, this system utilizes one groundwater well with one water reservoir for both potable water and fire protection.
- Well produces 75 gallons per minute.
- Total of 38 existing residential connections and one firehall. All had meters installed in 2012 under the ARRA water meter project.
- Wildfires are known to diminish the potable water supply to the community.
- This system is entirely gravity feed with no booster pumps or PRV vaults.
- Average monthly water consumption rate is 1.2 million gallons per month.

B. Water Metering Project

In 2017, Kelly Associates finalized a preliminary engineering report on a drinking water metering system for the Tribe. Health, sanitation and security issues with the existing community water systems include the occurrence of leaks and lack of ability to locate them or quantify the water loss. The occurrence of non-detectable leaks in the water systems raises concern for the integrity of the system, potential surface water influence and associated contamination. In addition, it is of the utmost importance that the Tribe conserve water and minimize water losses to protect public health and safety.

Completing the water metering coverage is another step in the right direction towards water conservation. Metering project is intended to give the Tribe a means to monitor or reduce existing leaks and excessive water consumption by implementing usage based rates on consumers. Reducing leaks and consumption will lower demand on the WTP thereby reducing the per capita energy and raw water intake requirements to serve communities on the Reservation. A reduction in demand will also increase the need for costly capital improvement projects to increase system capacities.

The acquisition of water meters and a billing system will have a corrective effect on water quality and therefore will mitigate low pressure and water quality concerns for the distribution system and WTP respectively.

Installation of water meters on existing unmetered connections and implementation of a meter reading and billing program will give the Tribe a means to monitor water consumption on an individual basis. The Tribes water demand, especially in Warm Springs, is at or above capacity during the summer months and the Tribe is financially not in a place to make large capital investments into systems. A reduction in water consumption will delay many of the costly capital improvement projects associated with increasing capacity. Further, revenue generated from water users will help support annual O&M costs.

This report provided a number of alternatives for the Tribe to consider for a water metering project primarily in the Agency area. The estimates for the water meter installation project ranges from \$1.8 - \$2.26 million. Annual O & M costs for various systems considered range from \$16,700 to \$45,600.

C. Water Fee Structure Development

There is currently no rate structure for services for any of the community water systems and commercial users are charged flat fees based on the size and business of the customer. These rates have not been updated since 2013 when the Tribal Government adopted sewer and water



rates for all connected customers. However, they were applied only to 21 non-residential customers.

D. Compliance Issues

1. Tribe received a letter from the EPA on May 25, 2019 with a request for government-to-government consultation on orders to address significant deficiencies and imminent and substantial endangerment to persons served by the Warm Springs Water Treatment Plant. This was a result of:
 - A pattern of turbidity exceedances that required the Tribe to issue two boil water notices in April of 2019.
 - Multiple main line breaks, two of which have caused low pressure events that required the Tribe to issue boil water notices in Nov. 2018 and May 2019.
 - Failure of the Tribe to maintain adequate disinfectant levels in the System's distribution for multiple days in April 2019
 - A general "state of disrepair" highlighted by the Tribes inability to address significant deficiencies within 45 days of those deficiencies being identified and re-identified in sanitary surveys in 2015 and 2018.

May 23, 2019, EPA issued an Emergency Administrative Order ("Emergency Order") pursuant to Section 1431 of the Safe Drinking Water Act ("SDWA"), 42 USC § 300f et seq. On Jun. 3, 2019, the Tribal Council approved entering into an Administrative Compliance Order on Consent ("Administrative Order") with EPA pursuant to Section 1414 of the SDWA which will require implementation of specified corrective action measures related to the Dry Creek Water Treatment Plant operations.

2. 2018 Sanitary Survey. The EPA sent a letter to the Tribe in Nov. 2018 regarding "Immediate public health concerns and sanitary survey significant deficiencies at the Warm Springs Water Treatment Plant." As stated in their letter there were significant deficiencies identified during the Jul. 2018 sanitary survey, "many of which were also identified in the Jan. 2015 sanitary survey." This letter identified the immediate public health concerns and a deadline for action. These concerns included:
 - Recalibration of the turbidimeter and maintaining calibration on a monthly basis.
 - Removing solids from the settle tanks.
 - Developing and implementing standard operating procedures regarding the coagulation process.

Under the EPA regulations, all significant deficiencies must be corrected within 45 days from the receipt of the letter (Nov. 27, 2018). Most of the BIA and HUD Imminent Threat grant funds were allocated to addressing the deficiencies and have specific requirements for spending. As such, the Tribe did not meet the 45-day requirement.

3. Annual Consumer Confidence Reporting (CCR). In 2018, the EPA reminded the Tribe about the annual CCR which is due annually on July 1. TSS Consultants noted in their 2018 report that, "Whereas it could not be determined from available files if a previous CCR has ever been prepared for the WSCWS, the 1/27/15 sanitary survey indicated that CCRs might have previously (at least in 2014) been sent out to consumers." The CCR was distributed on Jul. 2, 2018.
4. Violations & Public Notifications

- May 30, 2019: Boil water notice issued due to water main line break. Break suspected to be in main line pipe where it crosses the Shitike Creek. Boil water notice is still in effect.
- May 16, 2019 EPA Letter: Safe Drinking Water Act Treatment Technique Violation #43: Turbidity exceeds one Nephelometric Turbidity Units (NTU) – (>1 NTU). On Apr. 22, 2019, turbidity measurement at the WTP was recorded at 1.4 NTU.
- May 15, 2019: Boil water notice issued due to water main line break located near the Shitike Creek. Notice was listed on May 22, 2019.
- Apr. 25, 2019 EPA Letter: Safe Drinking Water Act Treatment Technique (TT) Violation: Failure to Maintain Microbial Treatment. The WTP was not in compliance with the Point-of-Entry Minimum Disinfection Residual Criteria between March 16 – 23, 2019. Additionally, Tribe failed to notify EPA about the low chlorine residual measurements as required.
- Apr. 23, 2019: Boil water notice was issued due to turbidity exceedance. Notice was lifted on Apr. 24, 2019.
- Apr. 10, 2019: Boil water notice was issued due to turbidity exceedance. Notice was lifted on Apr. 15, 2019.
- Mar. 13, 2019 EPA Letter: Safe Drinking Water Act Violation. This is a result of not submitting a completed Corrective Action Plan (CAP) to the EPA by Feb. 15, 2019. The CAP outlines steps that the Tribe is taking to address deficiencies in the 2018 Sanitary Survey. The CAP has been submitted but as a result of the Tribe not being able to address all deficiencies within the requested time frame, the Tribe will have to submit another Notice of Violation to the community. This was previously issued on Jul. 9, 2018.
- Dec. 26, 2018: Boil water notice issued on Dec. 26, 2018 due to turbidity exceedance.
- Nov. 19, 2018 EPA letter: Treatment Technique (TT) violation due to exceedance of monthly turbidity.
- Nov. 5, 2018: Boil water notice issued due to loss of pressure in the system.
- Jun. 29, 2018: Failure to Take Corrective Action Notice issued on Jun. 29, 2018 for the Sidwalter Community Water System due to no action on uncorrected significant deficiencies.

E. WTP Replacement

The Dry Creek Water Treatment Plant was constructed in 1980 and designed to treat and filter surface water using conventional treatment methods. It was initially designed with a capacity of 4.3 million gallons per minute. Due to the age of the facility, IHS began working with the Tribe last fall to conduct a preliminary engineering report to look at the possible expansion or replacement of this facility.

On April 1, 2019, Tribal Council took action to support the source of the replacement WTP (Deschutes River), the location (adjacent to the present WTP) and the criteria that will be utilized to select the method of water treatment. (Vote 6/o/o with Chairman not voting).

The most recent report provided to the Tribe was a 95% preliminary report and the final report is expected soon.

F. Water Distribution

- Water distribution system has over 190 miles of water pipes that carry the water supply to the community of Warm Springs. It also has over 25 PRV throughout the



water system. Most of the PRV are failing and there is excessive water loss in these areas.

- There is a need for three additional water reservoir tanks to serve the Wolfe Point subdivision, Tenino Valley residents and at the current Tewee reservoir site.
- The Shitike Creek Crossing has a 14" steel water main that has been compromised four times since the fall of 2018. The water main is the major carrier of water to all of the community south of Shitike Creek road. The breaks resulted in the community of Warm Springs without potable water and fire protection until it was repaired.
- The sewer system is a combination system that has both wastewater flows but also carries storm water to our wastewater facility near Shitike Creek.
- There are three lift stations that receive wastewater from three business and seven residential homes.
- All the wastewater collection system that is north of the Shitike Creek Road flows south to an inverted siphon that is crosses the Shitike Creek to the wastewater facility.
- The Bureau of Indian Affairs (BIA) is owns both water and wastewater infrastructure in the campus area.

G. Capital Improvement Budget

1. Refer to Capital Improvement – Infrastructure spreadsheet
2. Major Repair/Reserve Fund 313 includes a total of \$256,249.29 for Water/Sewer. Fund 314 has a total of \$587,078.86 which is split between housing subdivisions, water and waste water, and civil engineering projects. There is \$220,000 dedicated for the Industrial Park which is the required match for the EDA grant for the Industrial Park Area. The Tribal Council approved \$250,000 from Fund 313 and \$50,00 from Fund 122 (Financial Emergency Reserve) and for emergency repair costs related to the Shitike Creek water break.
3. Pending grant applications/asks
 - COO provided a letter of infrastructure requests on behalf of the Tribe to Senator Cliff Bentz and Representative Daniel Bonham on Apr. 19, 2019. The request was for \$12,999.714 and included 5 projects: Downtown public works infrastructure project; business/industrial park public works infrastructure project; WS wastewater treatment plant update; water meter project; water distribution project.
4. Grant funds received
 - BIA \$343,000 (Jan. 2018) for: finish water pump (\$85,000), raw water pump #2 (\$10,000), SCADA (\$148,000), HVAC controls (\$42,000), media filter (\$58,000).
 - HUD Imminent Threat Grant \$447,000 (Aug. 2018) for: filter bed depth & condition needs (\$30,000); water wet well transfer pumps replacement and electrical system upgrades (\$90,000); purchase 2 finish water pumps and installation, repair finish pump #2 (\$90,000); water filter media replacement (\$29,000); carbon dust enclosure replacement (\$30,000); stainless steel water intake screen replacement (\$48,000); relining of two backwash settling ponds (\$60,000); combining sewage/sampling drains to prevent overloading of systems (\$50,000).

- Development Director has been in communication with HUD regarding an Imminent Threat Grant to cover the emergency repairs of failing PRVs in the water distribution system.

5. Federally funded projects

- IHS Project PO-17-M42, \$50,000, EPA/SWDA funds; preliminary engineering report will help support concurring preliminary engineering projects for evaluating alternatives to modernize or replace the Dry Creek Water Treatment Plan by providing a basis for accurate estimation of community water demand. ALMOST COMPLETE.
- IHS Project PO-17-M37, \$1,063,181, \$978,126 IHS Regular Funds and \$86,055 IHS Housing Support Funds. Project will provide a new 2-acre lagoon cell, relining of the existing western cell, conversion of the eastern cell to an evaporation and controlled percolation cell, installation of sewer main and required appurtenances, and improvements to the existing access road to allow for year-round site access. ON SCHEDULE FOR START IN 2020
- IHS Project PO-19-EN4, \$60,000, to support engineering services needed to assess the geotechnical characteristics of the creek crossing to support design for a replacement water main. The scope includes soil borings and test pits within the creek bed to assess subsurface conditions. A part of project, IHS will collect the needed environmental data for NEPA. The deliverable for the project will be a geotechnical report that provides a design bases for consideration of directional drilling or horizontal pipe boring and a biological assessment. CURRENTLY UNDERWAY.
- Bureau of Indian Affairs - Engineering & Consulting Services of the Warm Springs Agency Campus water and wastewater system (FY 2016 Minor Improvement & Repair Project). First phase involves examining, analyzing, and assessing costs to remove and replace the water and sewer infrastructure on the Campus Area. Phase 2 involves the creation of construction documents, specifications and an estimate of sufficient detail to allow the government to successfully put the project out to bid and award a construction contract. When construction funds are available, Construction Administration will be performed in Phase 3 (Construction Administration is not a part of this Scope). PENDING.

II. Wastewater

Last year, TSS Consultants, did a compliance review of the Warm Springs Wastewater facility and noted that there were over 2,500 documented violations from the period of March 2008 to September 2012. In the fall of last year, IHS confirmed that the discharge violations continue to be an issue.

A. Currently the Tribe manages four wastewater systems on the reservation including two facultative lagoon systems located in Simnasho and Sunnyside. Additionally, the Tribe has the Warm Springs Wastewater Treatment Facility (NPDES Permit No. OR-003263-8) and the Kah-nee-ta Wastewater Treatment Facility (NPDES Permit No. OR 003410-0).

1. Warm Springs Wastewater Treatment Plant

- The BioLac Wastewater Treatment Plant was constructed along Shitke Creek and was built in 2001 at a cost of \$2.3 million dollars utilizing funds from EPA and



USDA. The facility was replaced after the old facultative lagoon could not meet the Federal requirements.

- The Wastewater Treatment Plant (WWTP) design flow is 2.1 MGD and utilizes UV system for disinfection process which inactivates the biological bacteria like cryptosporidium giardia.
- The WWTP has been producing removal rates of 95-98% for Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD). The treatment process produces cleaner wastewater exiting the wastewater treatment plant than what is currently in the Shitike Creek Watershed.
- BPU staff continually monitors the wastewater by weekly sampling and by sampling the upstream and downstream flow per our National Pollutant Discharge Permit (NPDES).
- IHS conducted an evaluation of the facility in Oct. 2018 at the Tribes request. The purpose of this evaluation was to assist the Tribe in bringing the facility back into compliance with the NPDES permit. The report identified a number of repairs and modifications that could improve the Tribe's wastewater treatment capability and enhance public health within the reservation.

2. Kah-nee-Ta Wastewater Treatment Plant

- The facultative lagoon at Kah-Nee-Tah Resort was built in the early 1970's and have had upgrades throughout the years. The final effluent after going through the different stages of the process will pass into a contact chamber where it is disinfected with 12.5% chlorine. The effluent will remain in the contact chamber for 45 minutes and slowly gets released into the dechlorination chamber where 95% sodium Thiosulfate is used to get rid of the chlorine and is finally discharged into the Warm Springs River.
- The system only discharges to the river in the winter months from October-March. We provide monitoring for the river flows upstream and downstream as well as the wastewater itself by sampling both weekly and also quarterly.
- There are three wastewater lift stations at Composite Products, Deschutes Crossing and the Museum at Warm Springs which are the only pressurized wastewater collection systems, the rest is by gravity flow.

B. Compliance Issues.

1. Resolution 11.743, adopted April 1, 2013, approved Administrative Order on Consent (AOC) agreements for both the Wastewater Treatment Plant in Warm Springs and the Wastewater Treatment Plan at Kah-nee-tah. The AOC is a voluntary, legal agreement between the EPA and the Tribe and is intended to address issues at both facilities, mainly exceedance of effluent discharge limitations and failure to submit ambient monitoring results. Both AOC agreements remain in effect and "will terminate upon issuance of a new NPDES permit authorizing the discharge of wastewater from the Facility, or upon six consecutive months of discharge without an exceedance of the Permit limits, whichever is sooner."
 - Daily Monitoring Report (DMR) from the Warm Springs WWTP from March 2008 to September 2012 indicated that the Facility had 2,537 violations of the monitoring and reporting requirements and effluent limits set forth in the Permit.
 - The WS WWTP Consent Order has nine major stipulations for the facility to come back into compliance such as 1) annual training to meet the compliance needs of the NPDES permit; 2) preparation and implementation of a

maintenance plan for the facility; 3) repair or replace the third operational blower located in blower room for the aeration basin, 4) install new pH and temperature probe for Outfall 1; 5) install new grinder pump in ultraviolet building; 6) surface water monitoring on Shitike Creek; 7) achievement of compliance with the permit's monitoring and reporting requirements; 8) compliance with the permit's effluent limits for pH, ammonia, *E. Coli*, BOD, and TSS; and 9) notification to the USEPA if the facility is unable to comply with the requirements of this Consent Order. **There are no records or documents known or located onsite that show compliance with the Consent Order.**" (TSS Consultants)

- Daily Monitoring Report (DMR) from the Kah-nee-ta WWTP from March 2008 to September 2012 indicated that the Facility had 1,541 violations of the monitoring and reporting requirements and effluent limits set forth in the Permit.
 - The KNT WWTP Consent Order has five major stipulations for the facility to come back into compliance such as 1) annual training to meet the compliance needs of the NPDES permit; 2) preparation and implementation of a maintenance plan for the facility; 3) achievement of compliance with the permit's monitoring and reporting requirements; 4) compliance with the permit's effluent limits for Chlorine, *E. Coli*, Biological Oxygen Demand (BOD), and Total Suspended Solids (TSS); and 5) notification to the USEPA if the facility is unable to comply with the requirements of this Consent Order. **There are no records or documents known or located on site that show compliance with the Consent Order.** A December 2016 email was reviewed where the USEPA expressed concern that the signification violations were continuing at KNT WWTP and that there was a lack of tribal response to USEPA requests regarding the stipulations in the Consent Order, and which result in USEPA enforcement action. However, no further correspondence from USEPA beyond this December 2016 has been seen. (TSS Consultants)
2. BPU Water/Wastewater has provided an update to AOC compliance requirements for the WS Wastewater Treatment Plant. Resolution 11,743, adopted on April 1st, 2013 approved an Administrative Order on Consent (AOC) for the Wastewater Treatment Plant (NPDES Permit No. OR-003263-8). The AOC is a voluntary, legal agreement between the EPA and the Tribe and intended to address issues at the facility, mainly exceedance of effluent discharge limitations and failure of the Tribe to submit ambient monitoring results.

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3. Pending grant applications/asks



- COO provided a letter of infrastructure requests to Senator Cliff Bentz and Representative Daniel Bonham on Apr. 19, 2019. The ST has provided Tribal Council with a copy of that letter. The request was for \$12,999.714 and included 5 projects: Downtown public works infrastructure project; business/industrial park public works infrastructure project; WS wastewater treatment plant update; water meter project; water distribution project.

- [Development Director has submitted first phase of an EDA grant for the Industrial Park which would remove existing septic systems and install a mainline sewer line.

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4. Grant funds received.

- IHS \$2.2m with \$335,000 tribal match. In October 2018, at the request of the Tribe, the Indian Health Service did an in-depth evaluation of the Warm Springs Wastewater Treatment Plant and provided that information to the Tribe. The report outlined rehabilitation needs and replacement of failed equipment (Attachment 2). The proposed improvements are recommended to improve the plant's capacity for compliance with the EPA permit. This project was added to the Tribes SDS list with IHS for 2019.

The IHS has approved the project for 2019 with construction to start in 2020. The estimated total cost is \$2,581,000 with IHS covering \$2,246,000 using regular funds and the Tribal match amount is \$335,000. The request today is asking for a supplemental budget in the amount of \$335,000 for the project. Upon approval, the BPU staff will began preparation to take the information out to the community which includes a historical review of the problems that have occurred over years.

5. Federally funded projects

- IHS Project PO-17-M37, \$1,063,181, \$978,126 IHS Regular Funds and \$86,055 IHS Housing Support Funds. Project will provide a new 2-acre lagoon cell, relining of the existing western cell, conversion of the eastern cell to an evaporation and controlled percolation cell, installation of sewer main and required appurtenances, and improvements to the existing access road to allow for year-round ste access. ON SCHEDULE FOR START IN 2020.



